MX2 Using Safety Quick Start Guide

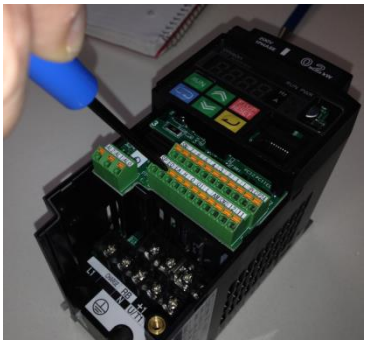
This guide discusses how to connect the MX2 drive to NX safety.

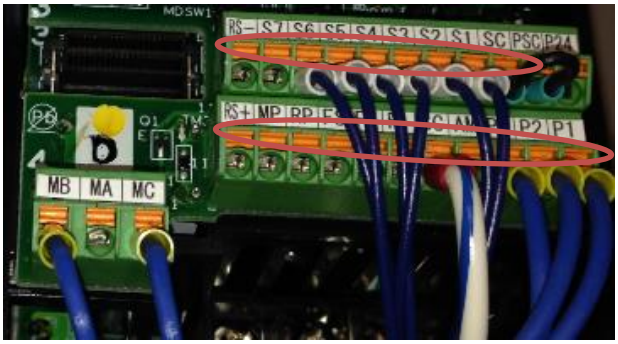
Description

1. Items needed:
    a. MX2-V1 Inverter Users Manual EN_201305_1585_E1_01, found at www.omron247.com.
    b. Safety Control Units User's Manual Z930, found in help section of Sysmac Studio.

Caution

Be careful when using the spring clips on the terminal blocks. MX2 is useless if you break the wrong one since the terminal block is permanent.

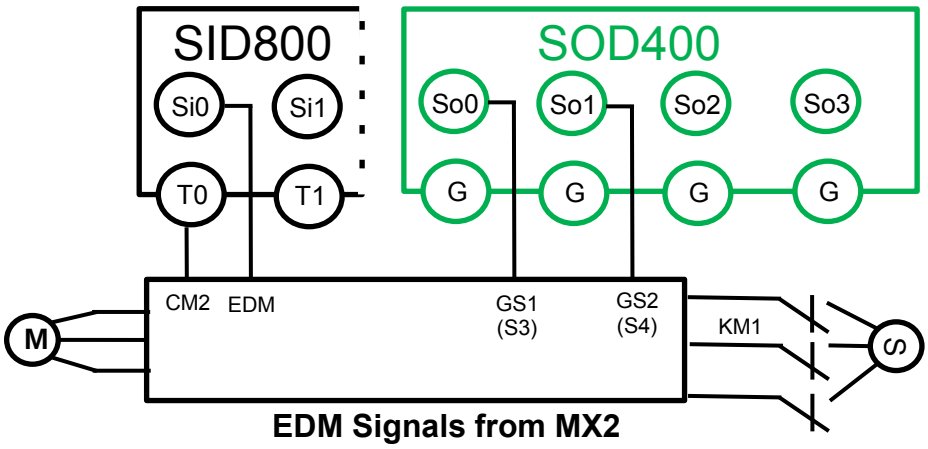




Precautions

1. Cable length should be 30m or shorter.
2. Reset
    a. Turn off the run command before resetting equipment.
    b. Release any safety devices.
    c. Verify GS1 and GS2 input signal are on.
    d. Turn on the run command.
3. It takes 10 ms or shorter for the inverter to shut off the output.

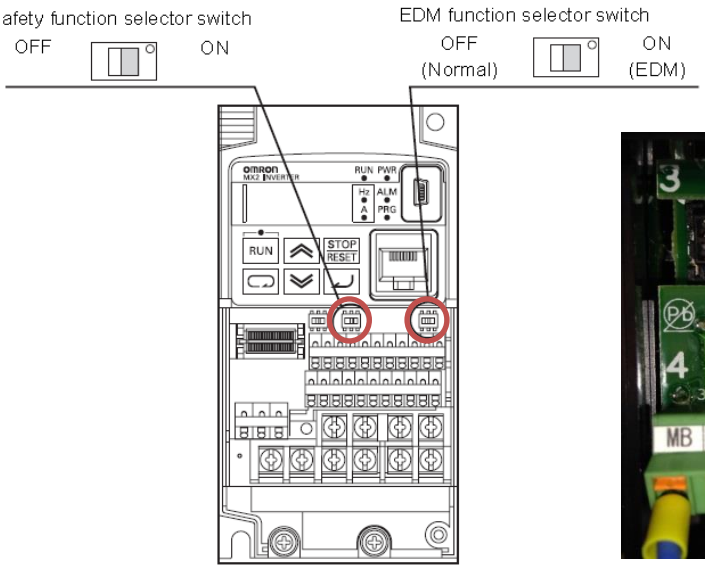
Wiring

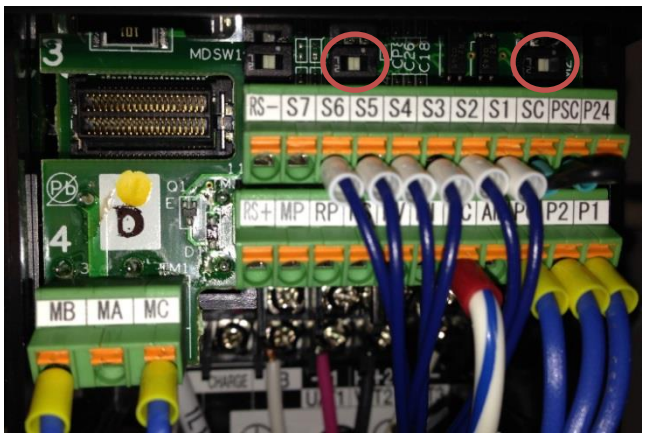


EDM Signals from MX2

Hardware Settings

1.) Turn off power.
2.) On MX2, open cover. (You will need a screwdriver.)
3.) Set safety and EDM function selector switches to “on”.





4.) GS1 and GS2 on the MX2 side must be wired into S3 and S4.

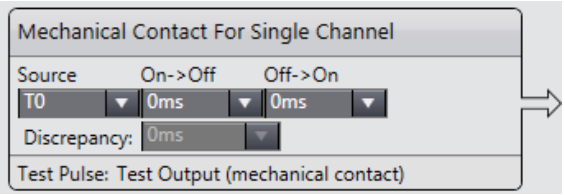
Parameters

Parameter No.	Function name	Data	Default data	Unit
C003	Multi-function Input S3/S4 Selection	77: GS1 (GS1 input)*1	18	–
C004		78: GS2 (GS2 input)*1	12	
C013	Multi-function Input S3/S4 Operation Selection	01: NC (NC contact)*1	00	–
C014				
C021	Multi-function Output P1 Selection	62: EDM (Safety device monitor)*2	00	–
C031	Multi-function Output P1 Operation Selection	00: NO (NO contact) *2	00	–
b145	GS Input Operation Selection	00: No trip (shut off by hardware) 01: Trip*3*4	00	–

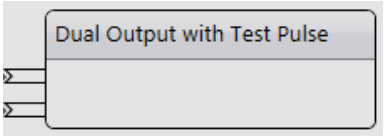
Parameters / Nodes

Multiview explorer -> Select Safety CPU -> Configuration and setup -> Communications -> Safety -> Safety I/O -> Select a node -> double click on parameters -> click on the white X next to the filter to see all of the nodes -> use **toolbox** to select a safety device (might need to drag right side window to see the toolbox) -> drag and drop parameter to knob -> complete for all nodes. **Note: The fields in the nodes are not used in the program. Could be used to enter part name/type/number.**

(Input) Mechanical contact for single channel



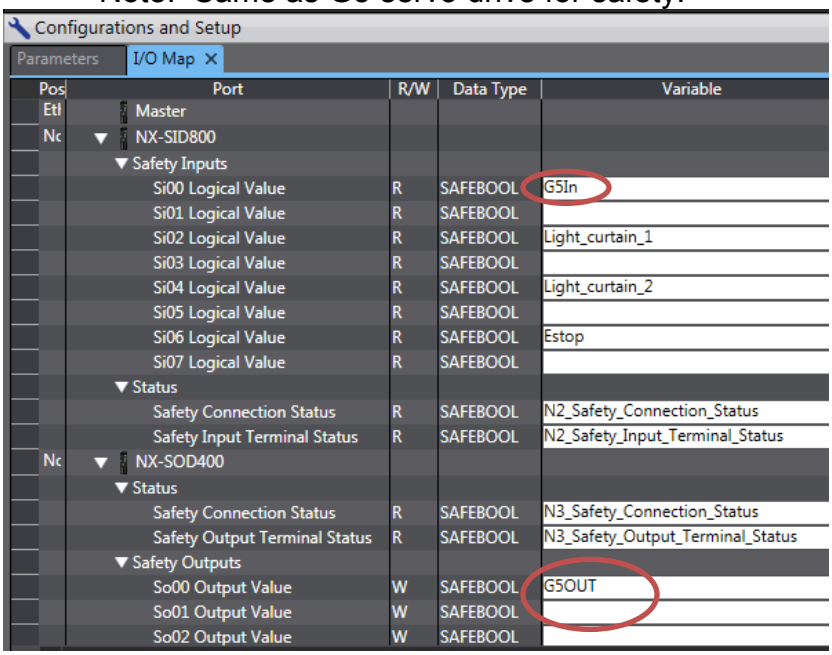
(Output) Dual output with test pulse



I/O Map

Multiview Explorer -> select Safety CPU -> Configurations and Setup -> double click on I/O Map -> make sure arrown buttons are all pointing down -> use variable template to paste **(Note: It will not paste if there is an empty field. Can only do groups when no empty fields.)** **OR** manually enter with right click **OR** scroll down to highlight all variables -> right click -> select variable. **(Note: Do not enter a variable name for the second input or output of dual channel devices.)**

Note: Same as G5 servo drive for safety.



Program

Use the EDM safety function block.

Multiview Explorer -> select new_safetyCPU -> Programming -> POU -> Programs -> Program0